

Safety

Background

Twenty-three of the conference participants attended the Safety Issue Session. Prior to the conference, each received a read-ahead paper describing the safety issues within the Marine Transportation System (MTS) that were expressed by Regional Listening Session attendees. The paper noted that safety risks within the system are substantial because of the equipment, operational, environmental, and cargo characteristics and that current safety management procedures may not be able to meet future demands primarily because of the expected rapid growth in world population and trade. The issues from the Regional Listening Sessions were summarized into three broad categories: vessel movements, use conflict, and infrastructure and were roughly defined as follows:

Vessel Movements - the growing number of faster and larger commercial vessels and recreational craft navigating through restricted channels will increase the risk of groundings and collisions, with resulting deaths, injuries, environmental and property damage, and economic loss. Contributing factors included poor coordination and traffic management, lack of real-time tide and current information, poor communications, inadequate training and education and lack of situational awareness.

Use Conflict - characterized by competition between different users with competing demands for limited MTS space and resources. Land side use conflict is a function of moving more cargo and passengers through urban areas and the intense demand and competition for land side access to the system by stakeholders and other interests such as the demand for residential and non-MTS commercial development. Waterborne use conflict will be based on the size, number, and speed of commercial vessels, number of recreational craft using the waterways, expansion of ferry and passenger vessel service.

Infrastructure - Current channels, anchorages, terminals, and intermodal connections cannot safely accommodate the vessels and cargo throughput of 2020. Damage to vessels, structures, and equipment potentially could result in fatalities and injuries, pollution, and economic loss. Existing piers, terminals, yard facilities, locks, anchorages, and other facilities were built for smaller vessels and many are inadequate for the larger vessels.

Alternatives for resolution from the Regional Listening Session were also presented in the paper. Based on this background, safety session participants were asked to answer the following questions:

- ◆ What is the desired safety end state of the MTS in 2020?
- ◆ What are the critical safety concerns that must be addressed to meet the desired safety end state?
- ◆ What actions should be taken to address these concerns?

- ◆ What is the timeframe for these actions?
- ◆ Who should shepherd these actions, and what are the responsibilities of the public and private sectors for these actions?

Outcomes

After reviewing the information, the session participants began by reviewing the modified draft MTS 2020 vision document. The safety aspects of the vision are contained in section III.D, General System-Wide Attributes: Safety. The group reached consensus on the general safety attributes that the system should include.

Safe operations result in increased efficiency of the Marine Transportation System protecting life, property, and the environment. Safety will continue to be a high priority of all stakeholders and system users. The MTS in 2020 will include the following safety attributes:

- ◆ Compliance with standards for personnel qualifications and for the design, construction, operation, and maintenance of vessels, infrastructure and equipment.
- ◆ Safety standards that are routinely evaluated and updated to insure that they remain relevant to the changing equipment and operations of a continually evolving system.
- ◆ Appropriate skills, training, and experience for all people working and recreating in the MTS.
- ◆ Well-developed and exercised safety and contingency plans to prevent and respond to incidents.
- ◆ Creative use of technology and information that contributes to safe operations in all geographic, geospatial, and environmental conditions.
- ◆ Collection, analysis, and distribution of information about marine casualties, near-miss incidents, and other lessons learned.
- ◆ The U.S. will continue to reflect a leadership role in raising international standards.
- ◆ Forums to provide greater access to marine safety expertise and resources.
- ◆ Investments in safety that match or exceed the anticipated increased risks resulting from emerging technology and changes in operations.

The group also identified four areas of concern that they decided to focus on during the working session. They expanded and revised the information presented in the read-ahead paper to focus on infrastructure which was then subdivided into information and physical components and on vessel operations which was also split into two subcategories of human factors and design. The participants worked in small groups to address these issues and develop goals and recommended actions for each of these areas. They then reconvened, made presentations on their efforts to the other sub-groups and received feedback. The sub-groups considered the feedback they received from the entire working session, made modifications as needed and reported the final product back to the group

for presentation to the conference plenary session. The safety issue session also agreed that safety is the hallmark of the MTS. The presentation was delivered by Mr. Charles Kurz, II, President of Keystone Shipping Company.

The goals and action highlights of the four sub-groups were (complete sets of the recommended actions follow this section of the proceedings):

Infrastructure - Information: Provide the mariner with accurate and reliable real-time information capable of being integrated to meet mariner needs to safely navigate in the nation's ports and waterways. This includes the development of real-time environmental observation and predictions systems with local stakeholder participation.

Infrastructure – Physical: This sub-group had several specific goals that focused on coordination among different agencies (federal, state, and local) to improve safety and efficiency and the improved management of operations and communications in congested areas.

Vessel Operations – Human Factors: Prevent maritime accidents associated with human factors. Highlights include rigorous enforcement of international conventions, mandatory training for recreational boating, improved communications capabilities, and development of an incident reporting system and the legal framework to support such a system.

Vessel Operations - Design: Construct, operate, and maintain the safest vessels. This would be accomplished by use of comprehensive Safety Management Systems and the promotion of human factors engineering.

The working session members also spent time discussing what they perceived to be a crucial issue facing not only safety, but all of the working sessions — that public awareness and knowledge of the MTS is the key to success for any endeavor to improve the system to meet the challenges ahead. To this end, the group presented an additional item in the final report out to the conference plenary calling for the Secretary of Transportation to accept the challenge of leading the MTS and setting the example for others to follow. They encouraged the development of a partnership to make the MTS as safe as possible and for this partnership, of government and private sector representatives to carry the message of the importance and safety of the system forward.

Safety

ISSUE —a description of the issue area of discussion starting with the issue title.	ISSUE: ESTABLISH MARINE SAFETY INFORMATION INFRASTRUCTURE
GOAL —provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.	GOAL 1: PROVIDE THE MARINER WITH AN INTEGRATE -ABLE ARRAY OF ACCURATE & RELIABLE REAL -TIME INFORMATION NECESSARY TO SAFELY NAVIGATE IN THE NATION 'S PORTS & WATERWAYS

	RECOMMENDED ACTIONS	Recommended Lead	Time Frame
A	Support the development & deployment of real-time environmental observation and prediction systems in those estuaries where local stakeholders deem this technology appropriate.	NOAA/USACE /USCG/ Stakeholders	S
B	Support the development and deployment of an internationally compatible AIS technology on all vessels – including recreational craft.	USCG/FCC	Commercial – M Recreational - L
C	Build, maintain, and deliver accurate vector nautical chart data sets for the Nation's waterways.	NOAA/USCG/ USACE/NIMA	S
D	Design & develop a system of sensor technologies to create a system of virtual aids to navigation.	USCG	L
E	Enhance situational awareness through deployment of 3D synthetic visioning enabled by DGPS, remote sensing, satellite imaging and other emerging technologies.	NIMA	L
F	Make available all other real-time information on vessel, schedules, characteristics, cargo, location, etc. to enable safe and efficient operations, planning and incident response.	Marine Exchanges in partnership with federal, state, & local authorities	M
G	Convey to the public through public/private partnerships the value of the marine safety information infrastructure and its impact on the quality of life.	Various	M

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ISSUE —a description of the issue area of discussion starting with the issue title.	ISSUE: PHYSICAL INFRASTRUCTURE
GOAL —provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.	GOAL 2: SAFETY REMAINS A KEY FACTOR IN CHANNEL PROJECT DESIGN

	RECOMMENDED ACTIONS	Recommended Lead	Time Frame
A	Include safety as a benefit in cost-benefit analysis when designing channels.	USACE	M
B	Ensure up-to-date guidelines for “safe” channel widths relative to anticipated ship size and maneuverability reflecting changes in size of vessels.	USACE	S
C	Improve communication among local users and stakeholders when improving/expanding facilities.	Ports with USACE through permit process	S
D	Funding for preventive maintenance.	Congress	M

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GOAL —provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.	GOAL 3: IMPROVE LOCAL PLANNING AND COORDINATION OF MARITIME (PORT/RIVER) USER FACILITIES TO PROMOTE SAFE AND EFFICIENT USE OF THE MTS

	RECOMMENDED ACTIONS	Recommended Lead	Time Frame
A	Identify current practices for locating maritime facilities – What are licensing / permit requirements? How are impacts of new facilities calculated?	Local govt., Industry reps. and Ports	S
B	Establish regional / local decision making structure for determining location of facilities – promote / require better communication among stakeholders and government.	Private users, Ports, Regional & local government	M
C	Educate commercial, recreational, and public maritime stakeholders and local government about this issue and goal.	Ports DOT- USCG Local govt.	S
D	Facilitate communication among private stakeholders/regional/local government to allow better communication and more rational decision making.	DOT	S

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GOAL —provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.	GOAL 4: IMPROVED MANAGEMENT OF OPERATIONS AND COMMUNICATIONS IN CONGESTED AREAS

	RECOMMENDED ACTIONS	Recommended Lead	Time Frame
A	Systematically review waterways in light of future demands and risk projections to determine adequacy of communications and safety fairways and/or recommended courses.	USCG	S
B	Consider/Propose new or revised fairways and/or recommended courses in areas determined to be inadequate.	USCG	S
C	Continue to upgrade shipboard capability to automatically up-date charts through electronic downlinks to real-time nautical data. In this effort, specifically include up-to-date recommended courses based on location of ocean structures.	NIMA/NOAA	M

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ISSUE —a description of the issue area of discussion starting with the issue title.	ISSUE: PHYSICAL INFRASTRUCTURE (CONTINUITY IN LEADERSHIP AND REGULATION / MANAGEMENT)
GOAL —provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.	GOAL 5: THE COAST GUARD PROVIDES NECESSARY LEVELS OF CONSISTENCY AND LOCAL KNOWLEDGE IN MTS MANAGEMENT, SAFETY, AND THE ENFORCEMENT OF REGULATIONS.

	RECOMMENDED ACTIONS	Recommended Lead	Time Frame
A	<p>Address continuity in Roles and Mission Study. Analyze the missions of the USCG within the MTS to provide necessary levels of consistency and local knowledge. For example, consider models from other agencies (such as USACE), consider civilian/military mix, assignment policies and career tracks.</p> <p>Personnel policies are causing inefficiencies in the system, costing significant sums of money for USCG and industry because of the constant transfers and training requirements. This current practice impacts safety performance and the credibility of the USCG in the field.</p>	USCG	S – Address M – Realign
B	Authorize / appropriate missions of USCG within the MTS.	Congress	M
C	Long term assignment of field marine inspectors and other HQ staff to provide consistency in enforcement of marine safety regulations within categories of marine operations (e.g., vessel types and regions).	USCG	S
D	Use this model as a first step towards more rationality and streamlined coordination in and between federal agencies.		L

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GOAL —provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.	GOAL 6: COLLECTION AND DISSEMINATION OF REAL-TIME ENVIRONMENTAL INFORMATION (SUCH AS WEATHER, TIDES, AND CURRENTS) APPROPRIATE TO EACH PORT WILL BE IN PLACE.

	RECOMMENDED ACTIONS	Recommended Lead	Time Frame
A	Install equipment to collect real-time weather, tide, and other data as needed and appropriate to each port.	NOAA	M
B	Ensure that marine weather data continues to be provided to meet safety needs.	NOAA	ON-GOING
C	Transfer NOAA “PORTS” system with personnel and funding to a Department of Transportation agency.	Congress	L
D	Encourage the use of real-time information for creative non-shipping uses (such as environmental management) to build public support for safety infrastructure needs.	Ports	M
E	Fund real-time information systems as a national, rather than local, investment.	Congress	S

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ISSUE —a description of the issue area of discussion starting with the issue title.	ISSUE: VESSEL OPERATIONS: HUMAN FACTORS THAT CONTRIBUTE TO MARINE SYSTEM ACCIDENTS
GOAL —provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.	GOAL 7: PREVENT MARITIME ACCIDENTS ASSOCIATED WITH HUMAN FACTORS

		Recommended Lead	Time Frame
A	Promote and enforce operational standards, training, and certification resulting in demonstration of competency and proficiency aboard all vessels in the maritime transportation system.	Industry/USCG/MARAD	M/L
B	Encourage rigorous, effective implementation and enforcement of STCW, ISM where applicable.	USCG/Industry/MARAD	S-ISM M- STCW
C	Establish effective, mandatory education and/or training programs at the state level to promote and encourage safe recreational boater operations. The Federal Government should provide adequate physical resources, incentives and appropriations to the states to effect and implement mandatory education and enforcement.	USCG/States DOT	M
D	Promote utilization of all available technology; enhance training of personnel in areas of vessel management and operations, e.g., computer simulation, bridge resource and bridge team management, training, and ship model simulation.	Industry/ USCG/DOT/ MARAD	S/M/L
E	Promote and enforce effective technical and oral communications between ship's crew, pilots, attendant vessel and other critical personnel.	Industry/USCG	S/M/L

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F	Establish a reliable incident reporting system including near miss information and a supporting legal structure.	USCG/ MARAD	S
G	Promote respect for the role of the mariner in order to enhance self-respect, performance and public image of the industry (PTP).	USCG/DOT Industry	S

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ISSUE —a description of the issue area of discussion starting with the issue title.	ISSUE: VESSEL OPERATIONS: DESIGN FOR SAFETY
GOAL —provide a brief description of the specific outcome for the year 2020 which describes a certain action (e.g., increase, maintain, reduce, etc.) within a broad area covered by the issue.	GOAL 8: CONSTRUCTING, OPERATING, AND MAINTAINING THE SAFEST VESSELS

		Recommended Lead	Time Frame
A	Develop and promote safety management system for the MTS that includes <ul style="list-style-type: none"> • Management commitment and organization • safety information • safe work practices • audit of management system • training • hazard analyses • management of change • operation procedures • investigation of incidents • emergency response • quality assurance • pre-start-up test 	Exec Council and segments of industry	M
B	Promote Human Factors engineering in vessel construction and operations.	Exec council and segments of industry	M
C	Inform the public about proactive steps the MTS is taking in safety management.	SECDOT and all of us	S